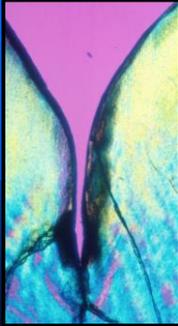


False Positive - explorer sticks in fissure



With the Visual-Tactile (Mirror-Explorer) Criteria in Fissure Caries

Sensitivity = Ability of a diagnostic test to correctly identify those teeth that have caries (39% sensitivity means that 61% of the time the lesion was not detected) – false negative

Specificity = Ability of a diagnostic test to correctly identify those teeth that do not have caries (94% specificity means that 6% of the time a lesion was identified that was not really there) – false positive

Different Criteria for Fissure Caries

Knowing that sealants arrest undetected and small enamel caries, can we move to criteria? --

- Is there a hole in the tooth?
- Is there shadowing under the enamel?
- Is there radiolucency evident on bitewings?



Treatment Planning Fissure Caries

	LOW RISK	MODERATE RISK	HIGH RISK
<u>Restorative Therapy</u>	None	Sealants Restoration of cavitated lesions	Sealants (with caution) Restoration of cavitated lesions
		Restoration of fissures with shadowing	Restoration of fissures with shadowing.

Outline

Decisions to Treat

Class I

- Primary and Permanent Teeth
- Amalgam
- Composite
- Incomplete Caries Removal

Class II

- Amalgam
- Composite
- Critical Issues

Principles of Preparations in Primary Teeth

- Smaller preparations due to smaller teeth.
- Shallower preparation (just into dentin)
- Internal angles rounded to reduce internal stress

Outline

Decisions to Treat

Class I

- Primary and Permanent Teeth
- Amalgam
- Composite
- Incomplete Caries Removal

Class II

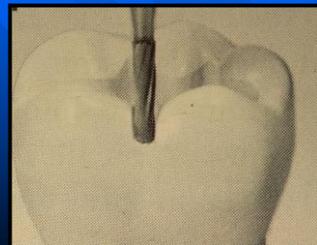
- Amalgam
- Composite
- Critical Issues

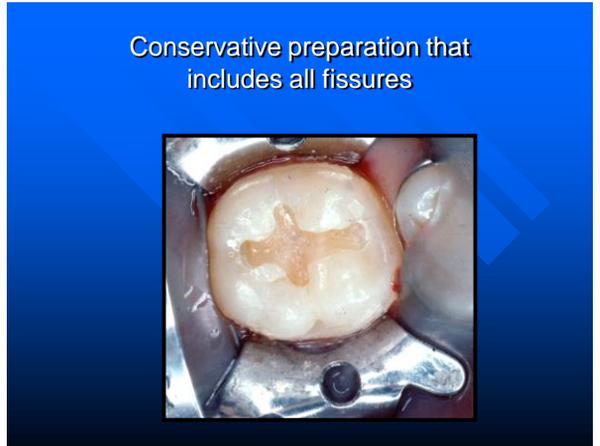
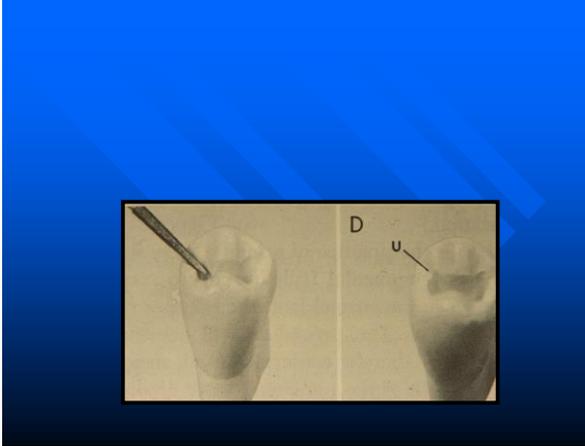
Restorative Materials for Intracoronal Restorations

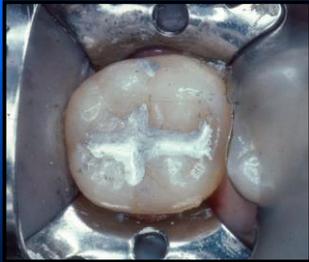
Advantages of Amalgam Restorations

- Less technique sensitive; better predictability of success
- Able to be placed without absolute moisture control
- Better wear resistance, especially in areas of occlusion
- Cheaper than composite materials
- Quicker than composites
- Some clinical trials in children show greater life span

Amalgam preparations – Include fissures in preparation







Outline

Decisions to Treat

Class I

- Primary and Permanent Teeth
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Class II

- Amalgam
- Composite
- Critical Issues

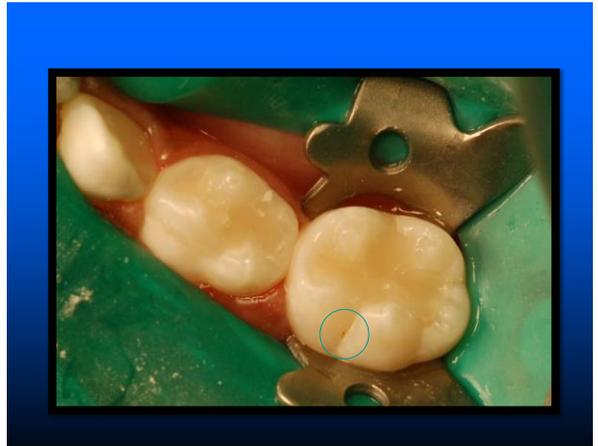
Restorative Materials for Intracoronal Restorations

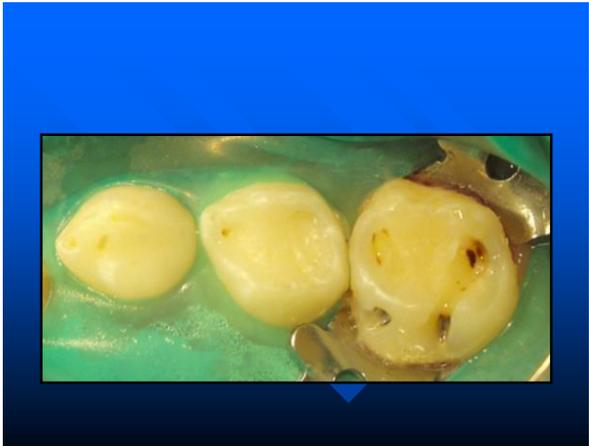
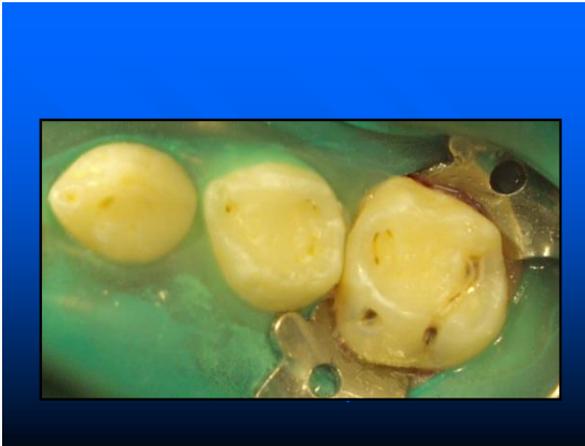
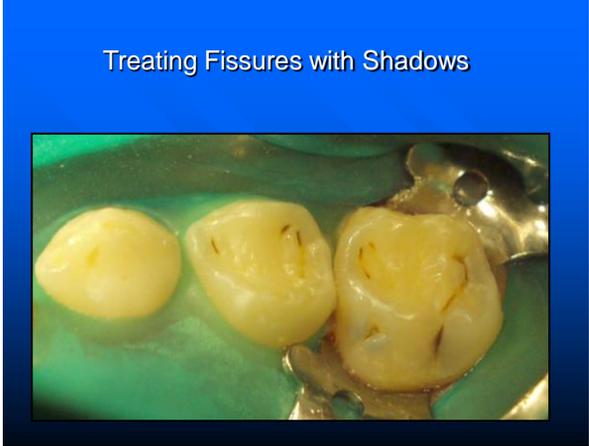
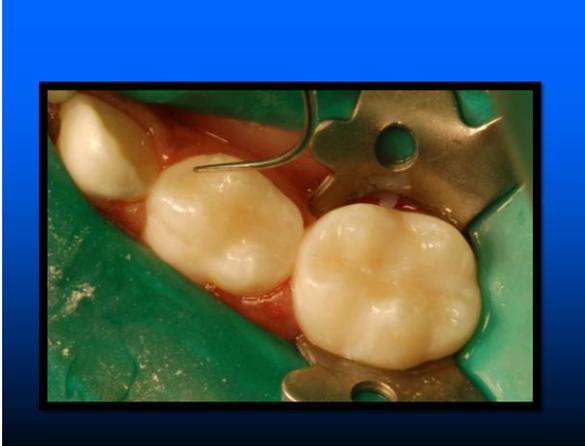
Advantages of Composite Restorations

- Leakage less, especially with dentin bonding
- Better aesthetics
- No concern about mercury
- Lower thermal conductivity
- Bonds tooth together
- Do not have to remove as much tooth structure

Treating the Routine Fissure Carious Lesion







Caries Spread in the Dentin



Caries Removed



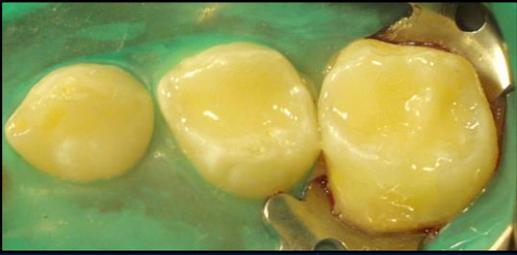
Initial Layer of Flowable Composite



Partially Filled with Flowable Composite



Completed with Filled Resin



Sealant over Composite Restoration



Completed Class I Restorations



Outline

Decisions to Treat

Class I

- Primary and Permanent Teeth
- Amalgam
- Composite
- Incomplete Caries Removal

Class II

- Amalgam
- Composite
- Critical Issues

Restorative Materials for Intracoronal Restorations

Treating Deep Caries – Incomplete Caries Removal



CLINICAL REVIEW

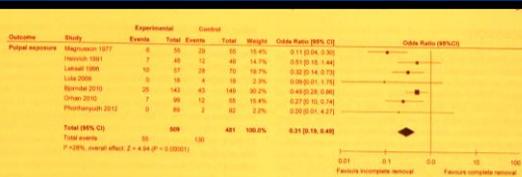
F. Schwendicke*, C.E. Dörler, and S. Paris

Department for Conservative Dentistry and Periodontology, Christian-Albrechts-University, Arnold-Hebe-Str. 3, 24105 Kiel, Germany; *corresponding author, schwendicke@kims.uni-kiel.de

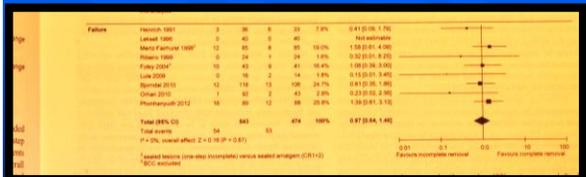
J Dent Res 92(4):306-314, 2013

Incomplete Caries Removal: A Systematic Review and Meta-analysis

Less Pulp Exposures



Failures



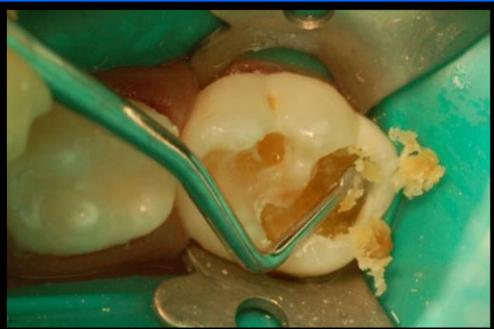
Outline Carious Lesion with a Football Diamond



Caries Outlined



Remove Soft Caries



Woody Dentin Over Pulp Not Removed



Base of Glass Ionomer



Restoration



Outline

Decisions to Treat

Class I

- Primary and Permanent Teeth
- Amalgam
- Composite
- Incomplete Caries Removal

Class II

- Amalgam
- Composite
- Critical Issues

Restorative Materials for Intracoronal Restorations

With the Radiographic Criteria of Enamel Proximal Lesions

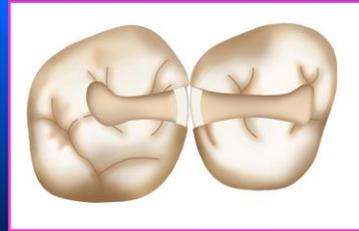
Sensitivity = Ability of a diagnostic test to correctly identify those teeth that have caries (30% sensitivity means that 70% of the time the lesion was not detected) – false negative

Specificity = Ability of a diagnostic test to correctly identify those teeth that do not have caries (76% specificity means that 24% of the time a lesion was identified that was not really there) – false positive

Treatment Planning Proximal Caries

	LOW RISK	MODERATE RISK	HIGH RISK
<u>Restorative Therapy</u>	None	Monitor enamel proximal lesions	Restoration of enamel proximal lesions
		Restoration of progressing lesions	Restoration of progressing lesions
		Restoration of cavitated lesions	Restoration of cavitated lesions
			Aggressive treatment to minimize continued caries progression

Isthmus= 1/3 to 1/2 intercuspals distance



Outline

Decisions to Treat

Class I

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- Composite
- Incomplete Caries Removal

Class II

- Amalgam
- Composite
- Critical Issues

Restorative Materials for Intracoronal Restorations

Proximal lesions on distal of first and mesial of second molars



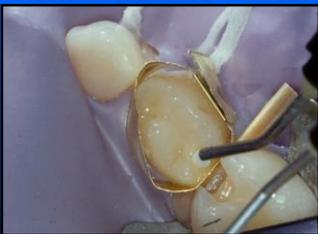
Dove Tails



Bonding Agent



Small Drop of Flowable Composite in Proximal Box



Filled with Condensable Composite



Complete and Finish One Restoration



Outline

Decisions to Treat

Class I

- Primary and Permanent Teeth
- Amalgam
- Composite
- Incomplete Caries Removal

Class II

- Amalgam
- Composite
- **Critical Issues**

Restorative Materials for Intracoronal Restorations

Which lesions need to be restored?; Which will progress?

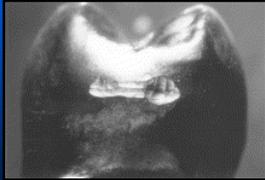


15 months later



Iatrogenic Adjacent Tooth Damage

- 97% of adjacent teeth had a preparation trauma
- statistically significant increase of damage was found on distal surfaces
- Over time operative treatment was performed on 10% of the undamaged test surfaces and on 35% of the damaged ones



Journal of Dentistry 2003; 31: 291-296; J Dent Res 1992; 71: 1370-1373

Outline

Decisions to Treat

Class I

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- Composite
- Incomplete Caries Removal

Class II

- Amalgam
- Composite
- Critical Issues

Restorative Materials for Intracoronal Restorations

Restorative Materials – Primary Teeth

	Class I	Class II	Class III	Class IV	Class V
Amalgam	Strong Evidence	Strong Evidence	No Data	No Data	No Data
Composite	Strong Evidence	Expert opinion for	Expert opinion for	No Data	Expert opinion for
Glass Ionomer	Strong Evidence **	Against	Evidence in Favor	No Data	Evidence in Favor
RMGIC	Strong Evidence	Evidence in favor	Expert opinion for	No Data	Expert opinion for
Compomers	Evidence in favor	Evidence in favor	No Data	No Data	Expert opinion for
SSC	Strong Evidence ***	Strong evidence ***	Expert opinion for	Expert opinion for	Expert opinion for
Anterior Crowns	N/A	N/A	Expert opinion for	Expert opinion for	Expert opinion for

Restorative Materials – Permanent Teeth

	Class I	Class II	Class III	Class IV	Class V
Amalgam	Strong Evidence	Strong Evidence	No Data	No Data	No Data
Composite	Strong Evidence	Evidence in Favor	Expert opinion for	Expert opinion for	Evidence in Favor
Glass Ionomer	Strong evidence*	Against	Expert opinion for	No Data	Expert opinion for
RMGIC	Expert opinion for	Expert opinion against	Expert opinion for	No data	Evidence in favor
Compomers	Evidence in favor	No Data	Expert opinion for	No Data	Expert opinion for
SSC **	No Data	No Data	No Data	No Data	No Data
Anterior Crowns ***	N/A	N/A	No Data	No data	No data



